

AMENDMENTS TO THE CLAIMS

This Listing of Claims will replace all prior versions and listings of claims in this application.

Please cancel claims 2, 3, 7, 10, 11, 14, 17 and 21 without prejudice or disclaimer.

1. (Currently Amended) A chemical conversion coating agent for use in pretreatment of cationic electrocoating for a substance to be treated, at least a part of which comprises an iron material, consisting of:

at least one kind selected from the group consisting of zirconium, titanium and hafnium; fluorine; and

a an amino group-containing water-soluble epoxy compound containing having an isocyanate group,

wherein a content of the at least one kind selected from the group consisting of zirconium, titanium and hafnium in the chemical conversion coating agent is 20 to 10000 ppm in terms of metal, and

the amino group-containing water-soluble epoxy compound having an isocyanate group is obtained by allowing an epoxy compound selected from the group consisting of bisphenol F epichlorohydrin type epoxy compound containing an amino group and bisphenol A epichlorohydrin type epoxy compound containing an amino group to react with partially blocked polyisocyanate, and a content of the amino group-containing water-soluble epoxy compound having an isocyanate group a content of the water-soluble epoxy compound containing the isocyanate group in the chemical conversion coating agent is 5 to 5000 ppm as a concentration of solid matter and wherein the pH of the agent is 1.5 to 6.5.

2-7. (Cancelled)

8. (Previously Presented) A surface-treated metal having
a chemical conversion coat formed by the chemical conversion coating agent according to claim 1.

9. (Original) The surface-treated metal according to Claim 8,
wherein the chemical conversion coat has a coat amount of 0.1 to 500 mg/m² in sum of a total amount of metals contained in the chemical conversion coating agent and carbon contained in the water-soluble epoxy compound.

10- 12. (Cancelled)

13. (Currently Amended) A chemical conversion coating agent for use in pretreatment of cationic electrocoating for a substance to be treated, at least a part of which comprises an iron material, consisting of:

at least one kind selected from the group consisting of zirconium, titanium and hafnium; fluorine; and

~~a an-amino group-containing~~ water-soluble epoxy compound containing having an isocyanate group,

wherein a content of the at least one kind selected from the group consisting of zirconium, titanium and hafnium in the chemical conversion coating agent is 20 to 10000 ppm in terms of metal, and

the amino group-containing water-soluble epoxy compound having an isocyanate group is obtained by allowing an epoxy compound selected from the group consisting of bisphenol F epichlorohydrin type epoxy compound containing an amino group and bisphenol A epichlorohydrin type epoxy compound containing an amino group to react with partially blocked polyisocyanate, and a content of the amino group-containing water-soluble epoxy compound having an isocyanate group a content of the water-soluble epoxy compound containing the isocyanate group in the chemical conversion coating agent is 5 to 5000 ppm as a concentration of solid matter and
further containing

1 to 5000 ppm of at least one kind of a chemical conversion reaction accelerator selected from the group consisting of nitrite ions, nitro group-containing compounds, hydroxylamine sulfate, persulfate ions, sulfite ions, hyposulfite ions, peroxides, iron (III) ions, citric acid iron compounds, bromate ions, perchlorinate ions, chlorate ions, chlorite ions as well as ascorbic acid,

citric acid, tartaric acid, malonic acid, succinic acid and salts thereof, and wherein the water-soluble epoxy compound has an amino group and wherein the pH of the agent is 1.5 to 6.5.

14. (Cancelled)

15. (Currently Amended) A chemical conversion coating agent for use in pretreatment of cationic electrocoating for a substance to be treated, at least a part of which comprises an iron material, consisting of:

at least one kind selected from the group consisting of zirconium, titanium and hafnium; fluorine; and

a an amino group-containing water-soluble epoxy compound ~~eontaining~~ having an isocyanate group,

wherein a content of the at least one kind selected from the group consisting of zirconium, titanium and hafnium in the chemical conversion coating agent is 20 to 10000 ppm in terms of metal, and

the amino group-containing water-soluble epoxy compound having an isocyanate group is obtained by allowing an epoxy compound selected from the group consisting of bisphenol F epichlorohydrin type epoxy compound containing an amino group and a bisphenol A epichlorohydrin type epoxy compound containing an amino group to react with partially blocked polyisocyanate, and a content of the amino group-containing water-soluble epoxy compound having an isocyanate group ~~a content of the water-soluble epoxy compound containing the isocyanate group~~ in the chemical conversion coating agent is 5 to 5000 ppm as a concentration of solid matter and further containing

at least one kind selected from the group consisting of: at least one kind of metal ions (A) selected from the group consisting of zinc ions, magnesium ions, calcium ions, aluminum ions, manganese ions and iron ions; copper ions (B); and a silicon-containing compound (C), and wherein the water-soluble epoxy compound has an amino group and wherein the pH of the agent is 1.5 to 6.5.

16.-17. (Cancelled)

18. (Previously Presented) The chemical conversion coating agent according to claim 15, wherein the silicon-containing compound (C) is at least one kind selected from the group consisting of silica, water-soluble silicate compounds, esters of silicic acid, alkyl silicates and silane coupling agents.

19.-26. (Canceled)